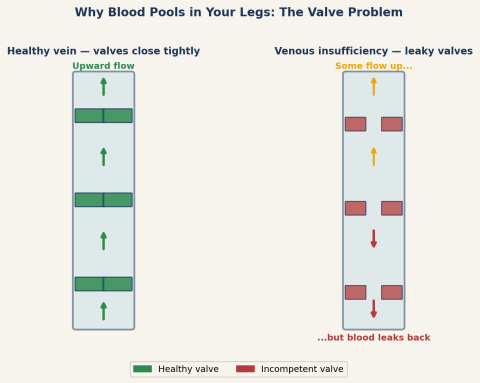
Understanding Venous Insufficiency

When leg veins leak — heavy legs, swelling, varicose veins, and how we fix them

A treatable cause of leg swelling that we can often turn around. We start with a duplex ultrasound.



Online: https://go.riasalimd.com/vi-guide

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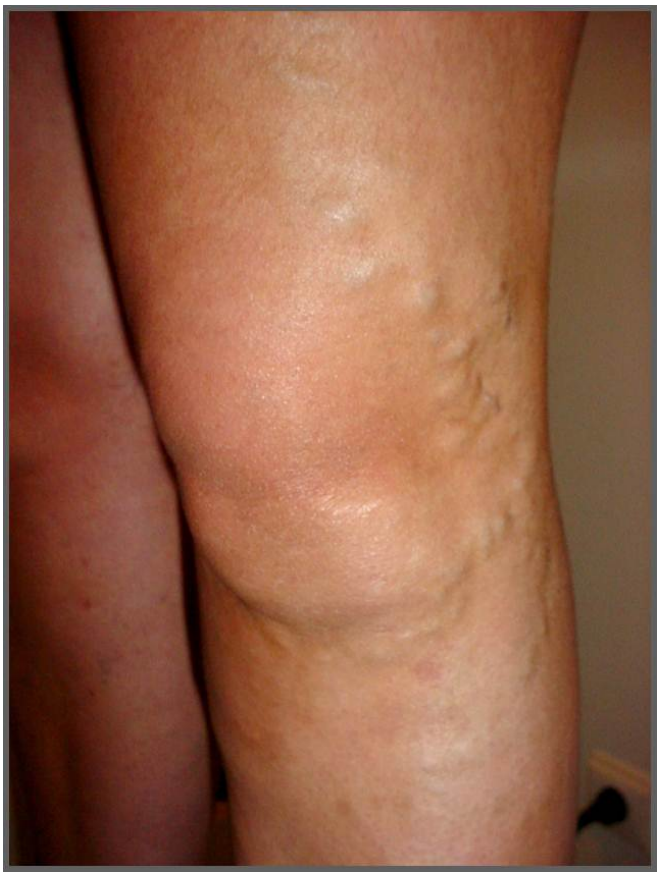
Last Updated: August 2026

Names & Terms You Will Hear

Term	Meaning
Chronic Venous Insufficiency (CVI)	The medical term. Leg veins are damaged. Blood backs up because the valves do not close right.
Venous reflux disease	Another name for venous insufficiency. It points to the backward flow of blood through leaky valves.
Varicose veins	Twisted, swollen veins you can see on the legs. They are a sign of venous insufficiency. But not all CVI shows on the skin.
Spider veins (telangiectasias)	Tiny red, blue, or purple veins just under the skin. Most are only a cosmetic issue. But they can be a sign of reflux deeper down.
CEAP classification	A worldwide system that grades how bad vein disease is. It runs from C0 (no signs) to C6 (open sore). Every vein doctor uses it.
Duplex ultrasound	The main test for vein disease. It maps the veins and shows which way blood flows. It does not hurt and takes 30 to 60 minutes.
Great saphenous vein (GSV)	The longest vein in the body. It runs from the inner ankle up to the groin. It leaks most often and gets treated most often.
Endovenous ablation	A modern, low-impact fix for reflux. It uses heat (laser or radio waves) or glue to seal the bad vein from the inside.

What Is Venous Insufficiency?

- In venous insufficiency, the leg veins cannot push blood back up to the heart well. The tiny one-way valves inside the veins get leaky. So blood pools down in the leg instead of flowing up.
- Leg veins must fight gravity to send blood up to the heart. They rely on three things. The valves must work. The calf muscle must pump blood up when you walk. And the vein walls must stay strong. Harm to any one can cause CVI.
- It affects about 25 million adults in the United States. It is more common in women. It is also more common if you stand for long hours, after pregnancy, and after a deep vein clot (DVT).
- Signs include heavy, aching legs and swelling that gets worse as the day goes on. You may also see varicose veins, itching, dark skin near the ankles, and in bad cases, open sores.
- We grade how bad it is with the CEAP system. It runs from C0 (no signs) to C6 (open sore). Most patients we see are C2 to C4. Stages C5 and C6 (a healed or open sore) need a vein check right away.



A real clinical photo of varicose veins from an incompetent accessory saphenous vein at the knee — the twisted, bulging veins you can see under the skin are the visible sign of the leaky valves described above. Image: Nini00, Wikimedia Commons 2013 (CC BY-SA 3.0).

Why It Matters

- Venous insufficiency gets worse over time if you do not treat it. Mild swelling and varicose veins can lead to skin changes, scarring, and sores that take months to heal.
- Venous leg sores (C6 disease) affect about 1 in 100 adults over 65. They drive most of the cost of long-term wound care. One sore can take 6 to 12 months to heal. It is far better to prevent it.
- Many patients come in afraid they have heart failure or a clot. It is key to tell CVI apart from DVT and right-heart failure. They can look the same but are treated in very different ways.
- Compression and low-impact ablation work well together. Most patients feel much better without open surgery.
- You must treat the leaky vein itself to keep a sore from coming back. If you only dress the wound and skip the cause, the sore tends to return again and again.

Treatment Options

- Step 1: confirm the diagnosis with a duplex ultrasound. It shows which veins leak, where the leak is, and how much it slows blood flow.
- Step 2: compression therapy. You wear graduated compression stockings each day. Use 20 to 30 mmHg for mild disease and 30 to 40 mmHg for worse disease. This is the first step for all stages.
- Step 3: lifestyle steps. Walk often. Raise your legs above heart level a few times a day. Lose weight if you need to. And do not stand or sit still for long.
- Step 4: endovenous ablation. We use this if symptoms stay despite compression, or for varicose veins with proven reflux. Modern methods seal the vein with radio waves (RFA), laser (EVLA), or glue (VenaSeal).
- Step 5: sclerotherapy. After ablation, we treat leftover varicose or spider veins. We inject a foam or liquid into the vein to seal it shut.
- Step 6: wound care for sores. This uses layered compression wraps, cleaning of the wound, and ablation of the leaky vein so the sore does not come back.
- We rarely strip veins by surgery today. We save it for the few cases where low-impact options fail or the anatomy does not fit.

Risks, Benefits, and Alternatives

Every choice has trade-offs. Use this table to start the shared decision conversation.

Option	Risks	Benefits	Alternatives
Compression therapy (stockings or wraps)	Hot in summer. Hard to put on, more so for older adults. You must wear them every day. Some people get skin irritation.	The first step for all CEAP stages. Eases symptoms a lot. Cuts swelling, slows the disease, and helps keep sores from coming back. Cheap and safe.	Endovenous ablation (a more lasting fix, but a procedure). No treatment (fine only for cosmetic C1 with no symptoms).
Endovenous radiofrequency ablation (RFA) or laser ablation (EVLA)	Mild bruising and soreness for a few days. Rare risks: skin burn, nerve irritation, DVT (under 1 in 100), and a vein that does not fully close. Done in the office.	Works very well. Over 90% of veins stay closed at 5 years. Symptoms ease in days. You go home the same day. Little downtime. Insurance covers it when reflux causes symptoms.	VenaSeal glue (no heat, no numbing fluid, much the same result). Vein stripping (a bigger operation, longer recovery, same long-term result). Staying on compression (fine if symptoms are mild).
VenaSeal medical adhesive closure	Rare allergic reaction. Phlebitis (vein swelling) along the treated vein. Costs a bit more. Not every insurer covers it.	No heat. No numbing fluid. No need for a stocking after. You can go back to normal life right away.	RFA or EVLA (proven equals, cost less). Sclerotherapy for smaller veins.
Sclerotherapy (foam or liquid)	Some people get skin staining (dark marks) that lasts weeks to months. Short-term swelling along the treated vein. DVT risk is very low.	Works well for leftover varicose veins after ablation, single branch veins, and spider veins. Done in the office, no numbing.	Microphlebectomy (tiny skin cuts to remove veins you can see). Watchful waiting if it is only cosmetic.

Option	Risks	Benefits	Alternatives
Surgical vein stripping	Skin cuts. Recovery takes 1 to 2 weeks. Risk of harm to the saphenous nerve. Mostly replaced by endovenous methods.	Closes the great saphenous vein well for the long term. Useful when the anatomy blocks endovenous access.	Endovenous ablation (we prefer it — less invasive, same long-term result). VenaSeal.

Common Misconceptions

Myth	Reality
Varicose veins are just a cosmetic problem.	Veins you can see are often the tip of a bigger problem. They point to leaky valves deeper down. Over time that can lead to swelling, skin changes, and sores. Varicose veins with symptoms and proven reflux are a medical issue, not a looks issue.
Compression stockings are uncomfortable and don't really help.	Well-fitted graduated compression (20 to 30 mmHg, or 30 to 40 mmHg by stage) is the most studied first step. It works. Newer stockings feel better than the old kind. Skipping them slows healing and raises the risk of a sore.
If my leg is swollen, it must be a blood clot.	DVT and CVI both cause swelling. But they look different on duplex ultrasound. DVT comes on fast, hits one leg, often hurts, and is dangerous (it can cause a lung clot). CVI builds up slowly, often hits both legs, and is worse late in the day. Always get new sudden swelling checked fast to rule out DVT first.
Surgery is the only real fix for varicose veins.	Endovenous ablation (RFA, laser, or glue) has taken the place of vein stripping in most cases. These low-impact methods match or beat surgery long term. They bring less pain and a faster recovery.
My insurance will not cover treatment because it is cosmetic.	Insurance most often covers care when duplex ultrasound shows reflux AND you have symptoms (pain, swelling, skin changes, or a sore). You often must try compression for 3 months first. Treating spider veins for looks alone is usually self-pay.
Walking makes varicose veins worse.	It is the other way around. Walking works the calf-muscle pump. That pump is the main force that pushes blood up and out of the legs. Sitting or standing still for a long time is what raises vein pressure. So walk often.

Myth	Reality
Once my ulcer heals, I'm cured.	If you do not treat the leaky vein, the sore comes back more than half the time within 5 years. Compression and ablation of the bad vein cut that risk a lot. The sore is just a sign. The vein disease is the cause.
Veins grow back if you take them out, so there's no point.	Treated veins do not grow back. New varicose veins can show up elsewhere over the years. But the vein we treated stays closed. The body sends blood through other healthy veins. It does not need the bad one.

Possible Complications

Knowing what can go wrong helps you spot problems early. Most complications are uncommon, especially with treatment.

Where / What	What Can Happen
Venous leg ulcer	The most serious problem. It is an open sore, most often near the ankle. It will not heal unless we treat the leaky vein behind it. Healing takes months. The sore comes back more than half the time without ablation.
Cellulitis and skin infection	Damaged skin near the ankles can pick up a germ. Sudden redness, warmth, swelling, and soreness — at times with a fever — need a check right away and antibiotics.
Bleeding from varicose veins	A surface varicose vein can burst and bleed a lot, often after a small bump. Press on it, raise the leg above the heart, and call us. Ablation seals the vein so it does not bleed again.
Superficial thrombophlebitis	A painful clot in a surface vein, often along a varicose vein. It feels like a hard, red, sore cord under the skin. Most cases settle with compression and an anti-inflammatory drug. But we must rule out a spread to the deep veins (DVT).
Deep vein thrombosis (DVT)	Less common with CVI, but it can happen — most of all after you have been still for a while. New swelling and pain in one leg is an emergency. It needs a blood thinner and a check right away.
Lipodermatosclerosis	Long-term scarring of the skin and fat low on the leg from years of CVI. It gives the leg an 'upside-down champagne bottle' shape. It comes before a sore. Compression slows it down.

Points to Know

If you remember nothing else, remember these key points.

- Walk every day. The calf-muscle pump is your body's best tool against vein pressure.
- Wear graduated compression stockings from morning to bedtime. Put them on before you get out of bed if you can.
- Raise your legs above heart level for 15 to 20 minutes, two or three times a day.
- Do not stand or sit still for more than an hour. Walk or do calf raises every 30 to 60 minutes.
- Stay at a healthy weight. Every pound you lose takes pressure off the leg veins.
- Put lotion on the skin near your ankles. It keeps the skin from breaking down into a sore.
- New sudden swelling and pain in one leg — call us today so we can check for DVT.
- Get a duplex ultrasound before any vein procedure. Treating what the scan finds works far better than treating only what you can see.

When to Call Us - and When to Call 911

If you are not sure, call. We would rather hear from you twice than miss a real problem.

- Sudden, bad swelling or pain in one leg — call 911 or go to the ER (this may be a DVT).
- An open sore on the leg or foot that will not heal — call us today.
- Skin that breaks down, turns red, feels warm, or weeps fluid near the ankles — call us today.
- Leg swelling that does not go down even after you raise the leg overnight — call us this week.
- Bleeding from a varicose vein — press on it, raise the leg, and call us today.
- Skin near the ankles that keeps turning brown or red — call us this week.
- Chest pain or trouble breathing along with leg swelling — call 911 (this may be a lung clot).
- Any new heaviness, aching, or swelling that gets in the way of daily life — call us for a check.

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Trusted Resources

The links below are the trusted resources Dr. Ali used to write this guide and that he recommends you visit for more information. Each is a clickable link in the digital version and a Short.io tracked URL on the printed version.

- Cleveland Clinic — Chronic Venous Insufficiency - Patient-friendly overview of CVI symptoms, evaluation, and treatment.
- Mayo Clinic — Varicose Veins - Plain-language guide to varicose veins, the most visible form of CVI.
- Society for Vascular Surgery — Vein Care for Patients - Patient resource section of the professional society guiding modern venous treatment.
- American Venous Forum — Patient Information - Patient education from the vascular specialty society dedicated to venous disease.

Sources Used to Build This Guide

Every recommendation in this guide is grounded in one or more of the studies, guidelines, or trusted resources below. Short links are tracked so Dr. Ali can see which references patients are reading; nothing personally identifying is captured.

- Gloviczki et al — SVS/AVF/AVLS 2023 Clinical Practice Guidelines for Varicose Veins (J Vasc Surg 2023) *[Guideline]*
  Current Society for Vascular Surgery / American Venous Forum guideline. Defines CEAP, recommends duplex ultrasound for diagnosis, places ablation as first-line for symptomatic reflux of the great or small saphenous veins.
- Eklöf et al — Revision of the CEAP Classification for Chronic Venous Disorders (J Vasc Surg 2020) *[Guideline]*
  The updated CEAP (Clinical, Etiology, Anatomy, Pathophysiology) classification system used to stage venous disease severity. C0-C6 framework anchors the staging section.
- Rasmussen et al — Randomized Trial of Endovenous Laser, RFA, Foam Sclerotherapy, and Surgical Stripping (Br J Surg 2011) *[Clinical Trial]*
  Comparative trial of the four main treatment modalities for great saphenous vein reflux. Established RFA and EVLA as equivalent to stripping with less morbidity.
- Brittenden et al — CLASS Trial: Treatment of Varicose Veins (NEJM 2014) *[Clinical Trial]*
  Large RCT comparing laser ablation, foam sclerotherapy, and surgical stripping. Laser ablation gave the best occlusion rates with shortest recovery; foam sclerotherapy had lowest cost but higher recurrence.
- Cleveland Clinic — Chronic Venous Insufficiency *[Clinical]*
  Patient-friendly overview of CVI symptoms, diagnosis, and treatment options.
- Mayo Clinic — Varicose Veins *[Clinical]*
  Plain-language overview of varicose veins — the most visible form of venous insufficiency.
- O'Donnell et al — SVS/AVF Management of Venous Leg Ulcers Guideline (J Vasc Surg 2014) *[Guideline]*
  Standard of care for venous leg ulcers (C6 disease): compression, wound care, and ablation of underlying reflux to prevent recurrence.
- AAFP — Chronic Venous Insufficiency: Diagnosis and Management (Am Fam Physician 2019) *[Clinical]*
  Primary-care framework: when to refer for duplex ultrasound, conservative vs interventional options, and patient counseling.

About This Guide

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Version: 2026-08-15

Reviewer note: Reviewed against Cleveland Clinic, Mayo Clinic, AAFP, and SVS patient pages. Ours adds: a valve-anatomy diagram showing the actual mechanism, the CEAP staging system explained in plain English, an honest RBA comparison of compression vs ablation vs sclerotherapy from the CLASS trial, and explicit guidance on when leg symptoms suggest DVT instead.

Disclaimer

This guide is for educational purposes only and does not replace medical advice from your physician. Recommendations may not apply to every patient. Always follow the specific instructions of Dr. Ali and your care team. In an emergency call 911 or go to the nearest emergency department.

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